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PROJECT: EPA Region 2 RAC 2 Contract No.: EP-W-09-002
Work Assignment: 054-RICO-A282

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SUBJECT: Response to EPA Comments on RI Screening Criteria
Wolff-Alport Chemical Company Site
Remedial Investigation/Feasibility Study
Ridgewood, Queens, New York

Dear Mr. Singerman:

CDM Federal Programs Corporation (CDM Smith) is pleased to submit the Response to EPA Comments on the RI Screening Criteria table received on May 18, 2016 for the Wolff-Alport Chemical Company Site located in Ridgewood, Queens, New York.

If you have any questions regarding this submittal, please contact me at (732) 590-4727.

Very truly yours,

CDM FEDERAL PROGRAMS CORPORATION

Muzaffar A. Rahmani
Site Manager

PSO: BOH

cc: T. Mongelli, EPA Region 2 B. MacDonald, CDM Smith
RAC2 Region 2 Document Control



**Response to EPA Comments on RI Screening Criteria Tables received on 5/18/2016
Wolff-Alport Chemical Company Superfund Site
Ridgewood, Queens, NY**

General Response: CDM Smith concurs with comments on Tables 4-1 and 4-2. Attached please find the revised Tables 4-1 and 4-2.

CDM Smith recommends using the initial radiological RI screening criteria (Table 4-3) agreed to during the July 24, 2014 Technical Scoping Meeting for the following reasons:

- A significant portion of the survey strategy for determining when/where to end sample collection during surveys was based upon using the agreed-upon screening values.
- For some radionuclides, such as radon and thoron, no background measurements were made, therefore establishing an upper confidence level as a screening value will be problematic.
- Other USEPA projects used the 5 pCi/g values for their residual contamination acceptance levels including the Montclair/ Glenridge/ Bloomfield; Li Tungsten; and Maywood, Superfund sites

Alternatively, the 95% UCL of background values for soil, sediment, and air as described in specific responses below could be used to determine the radiological screening criteria. The revised radiological screening criteria based on the 95% UCL of background are presented in the attached Table 4-3.

Please note the screening criteria proposed on these tables will be utilized for screening the data in the RI and do not represent preliminary remediation goals or cleanup criteria that will be selected following performance of risk assessments and completion of the feasibility study report.

Table 4-3

1. The table's title refers to "groundwater" only. Please revise.

Response: The title of table 4-3 was modified to read: RI Screening Criteria - Radiological Analyses

2. The use of 5 pCi/g as "health based guidance" is inappropriate here. OSWER Directive 9200.4-25 (EPA, 1998a) clearly discusses the limitations on the use of Part 192 in situation that differ from the original intent. On Page 5, the Directive also references its use only when a site specific risk assessment demonstrates that 5 pCi/g is protective. No such evidence has been provided here. 40 CFR Part 192 UMTRCA remediation goals are not applicable here for delineation purposes.

If the Table's proposed levels for "Solids" are actually adopted as cleanup levels in the future, that would define and delineate potential "cleanup" extent, not contamination

extent. All proposed levels in the Table except “Aqueous” if implemented would not be instrumental in determining the extent and depth of contamination. EPA (2000a) guidance states with respect to the soil screening levels (SSLs): “SSLs are not national cleanup standards. SSLs alone do not trigger the need for response actions or define “unacceptable” levels of radionuclides in soil.” With respect to delineation, the most recent EPA OSWER 9285.6-20 (2014) guidance states in response to its Question 4 the following:

“Q4. How should the areal extent and depth of radioactivity contamination be determined?

As noted in Q1, a conceptual site model generally should be developed to identify reasonable boundaries for investigating the nature and extent of contamination. General guidance for site characterization activities is provided in Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA 1988a). Guidance specifically for site characterization of radionuclides in soil is found in the Soil Screening Guidance for Radionuclides documents (EPA 2000a, 2000b).” This referenced guidance, EPA (2000a), states with respect to the soil screening levels (SSLs):

“SSLs are not national cleanup standards. SSLs alone do not trigger the need for response actions or define “unacceptable” levels of radionuclides in soil. In this guidance, “screening” refers to the process of identifying and defining areas, radionuclides, and conditions, at a particular site that do not require further Federal attention. Generally, at sites where radionuclide concentrations fall below SSLs, no further action or study is warranted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Generally, where radionuclide concentrations equal or exceed SSLs, further study or investigation, but not necessarily cleanup, is warranted.

...

To calculate SSLs, the exposure equations and pathway models are run in reverse to backcalculate an “acceptable level” of radionuclides in soil. For each pathway, radiotoxicity criteria are used to define an acceptable level of contamination in soil, based on a one-in- million (10^{-6}) individual excess lifetime cancer risk.”

EPA OSWER 9285.6-20 guidance states in response to its Question 1 the following.

“...the PRG calculator should be used for determining SSL risk based concentrations rather than the Rad SSG documents...”. PRG calculator was shown to have some model implementation limitations (ANL, 2015). If such limitations are encountered in the process of determining of SSLs, then the alternate model can be used instead.

In summary, the soil screening levels (SSLs) are different from cleanup levels. For SSLs, general guidance provided in (EPA 2000a, 2000b) supplemented by PRG calculator specific soil concentration values corresponding to a one-in-a-million (10^{-6}) individual excess lifetime cancer risk should be used for Solids in Table 4-3. Because the contaminants are present in natural background and may vary in concentrations. If these values, as determined above natural background, are low and fall within natural variability,

then in accordance with Hazard Ranking System (HRS) requirements for naturally-occurring radionuclides "...areas of observed contamination are defined by site-attributable radionuclide concentrations that equal or exceed a value two standard deviations above the mean site-specific background concentration..." (Weston, 2012).

Response: CDM Smith agrees with the general concepts stated above. To facilitate a screening approach, CDM Smith proposes to use values that exceed the 95% UTL for sediment and soil background as the screening criteria, since the PRG screening values are significantly less than the mean background values for the radionuclides of concern. For example, the soil screening level for Th-232 listed in the 2014 PRG tables is 4.8E-02 pCi/g, while the background values determined in the RI data collection and analysis show the mean value for Th-232 to be 0.750 pCi/g.

The initial RI investigation plan did not attempt to develop background data for radon or thoron. The EPA PRG screening values are a small fraction of typical background levels of radon and thoron so their use as a screening tool will be limited. In addition, the Weston 2012 report did not contain the thoron measurement background data so no calculations could be made based on that data. As a consequence, the screening values for radon and thoron will be based on the background levels for Queens established by the New York State Department of Health 2011 state wide radon survey.

CDM Smith does not possess the entire NYSDOH background data set and will attempt to obtain this data set from NYSDOH. In the event the full data set cannot be obtained, the calculation of the 95% UCL will be used rather than the UTL by calculating the coefficient of variation (CV) from the geometric mean and geometric standard deviation. The arithmetic standard deviation will be calculated from the CV; the arithmetic mean is specified in the summary report provided by NYSDOH. This is an approximation of the true standard deviation but should suffice for screening purposes as the radon levels resulting from soil contaminants and their contribution to risk will be accounted for in the FS risk analysis. The radon 95% UCL will also be used for thoron.

3. Proposed values for "Air" contaminants if implemented would not be instrumental determining the extent of air pathway radiological contamination. Proposed Radon level is EPA Action Level, not screening level. Regarding Rn-222, there is no EPA Action Level for it. This gas normally has much lower natural air concentration levels. The proposed Thoron level is not supported by any technical basis. The claim that the 15 pCi/L of Rn-222 results in equivalent risk needs to be supported by analyses, the risk level needs to be provided.

In further determinations of cleanup levels, the provided logic of equivalency of risk should be avoided. The fact that Thoron air concentration would pose the equivalent risk as the

Radon only means that, if both gases are present at these levels, then the receptor risk doubles for the same receptor scenario. Doubling the risk is not the intent of the EPA Action Level guidance for Radon or any CERCLA remedial guidance. Generally, if several contaminants are present, the well known “unity rule” should be followed. The EPA Action Level guidance exists only for Radon, Rn-222, not for any other radioactive gases, especially if those gases are known to be emanated by the site’s contaminants. In complex urban underground environment, there might be multiple conduits for radioactive gas emanating from soil contamination, accumulating and reaching the receptors. In accordance with HRS, the observed release to the air migration pathway is defined by site-attributable radionuclide concentrations that equal or exceed a value two standard deviations above the mean site-specific background concentration (Weston, 2012). Such values should be used for screening levels of Radon and Thoron. Several very localized vents of relatively high Thoron concentration were observed at the site proper and in several buildings located in close proximity to the site.

Response: As stated in response to comment 3, screening levels for radon and thoron will be established by using the 95% UCL from radon background levels. Regarding dose/risk equivalency between radon and thoron, the values established in Appendix B to 10CFR20 provide Derived Air Concentrations equivalent to 1 WL for Rn-220 and 0.33 WL for Rn-222; hence the factor of three ratio noted in the initial screening criteria tables. Because CDM Smith will be altering the initial approach for screening values to employ comparison of collected data to background, the need to demonstrate the relative dose equivalency and risk is no longer needed.

4. Proposed “Th-232” designation is misleading and does not correctly reflect the referenced 40 CFR 141.15 (b) regulatory requirement. This screening level should be as follows: “Gross alpha particle activity (including radium-226 but excluding radon and uranium)—15 pCi/L.”

Response: Prior to the field investigations, there was no intent or EPA direction to analyze samples for the full suite of values as specified in 40CFR141.15. During the technical scoping meeting it was determined that use of gross alpha would be an inappropriate metric because 1) the contaminants were known and 2) gross alpha does not provide a measure by which to determine risk or dose. Because no background water concentrations were obtained, CDM Smith is recommending a screening criteria of 5 pCi/L to apply to the sum of Ra-226 and Th-232 determined in the water samples.

5. Regarding the overall approach to determine nature and extent of contamination, the guidance is provided in the most recent OSWER Directive 9200.4-40 (EPA, 2014) where it refers to the EPA Directive 9355.3-01 (1988b) guidance in this regard. That guidance states in Section 3.4.1.3, The Nature and Extent of Contamination: "Figure 3-2 shows an example of how the extent of soil and ground-water contamination can be represented in

terms of excess lifetime cancer risk. Similar figures can be prepared showing concentrations rather than risk values."

Response: Comment noted. The initial RI approach, as discussed during the technical scoping meeting with EPA and described in the subsequent RI QAPP, was not risk based; CDM Smith maintains at this time that the RI should not take a risk-based approach. Instead CDM Smith is agreeing to the use of the 95% UTL of each nuclide's background level as the screening concentration to aid in determination of nature and extent of contamination.

NYCDEP Comment

1. The City requests clarification regarding selection of the RI Groundwater Screening Criteria covered in Tables 4-2a, 4-2b, 4-2c, 4-2d and 4-3. The standards listed are based upon the classification of the groundwater as drinking water. However, the City does not, and has no plans to, use the groundwater as a drinking water source. Therefore, the City questions whether the proposed drinking water based standards are appropriate screening criteria and recommends that the prospective use of the groundwater be considered in establishing the Screening Criteria.

Response: While the groundwater is not currently a drinking water source, under Superfund, we use drinking water standards as groundwater standards.

Table 4-1a
RI Soil Screening Criteria - VOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Volatile Organic Compounds (All units: µg/kg)	CAS Number	Standards					RI Screening Criteria (4)
		Federal	New York				
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	NYSDEC CP-51 Soil Cleanup Guidance: Residential (3)	
1,1,1-Trichloroethane	71-55-6	8,100,000	100,000	500,000	1,000,000	NL	100,000
1,1,2,2-Tetrachloroethane	79-34-5	600	NL	NL	NL	35,000	600
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	40,000,000	NL	NL	NL	100,000	100,000
1,1,2-Trichloroethane	79-00-5	1,100	NL	NL	NL	NL	1,100
1,1-Dichloroethane	75-34-3	3,600	19,000	240,000	480,000	NL	3,600
1,1-Dichloroethene	75-35-4	230,000	100,000	500,000	1,000,000	NL	100,000
1,2,3-Trichlorobenzene	87-61-6	63,000	NL	NL	NL	NL	63,000
1,2,4-Trichlorobenzene	120-82-1	24,000	NL	NL	NL	NL	24,000
1,2-Dibromo-3-chloropropane	96-12-8	5	NL	NL	NL	NL	5
1,2-Dibromoethane	106-93-4	36	NL	NL	NL	NL	36
1,2-Dichlorobenzene	95-50-1	1,800,000	100,000	500,000	1,000,000	NL	100,000
1,2-Dichloroethane	107-06-2	460	2,300	30,000	60,000	NL	460
1,2-Dichloropropane	78-87-5	1,000	NL	NL	NL	NL	1,000
1,3-Dichlorobenzene	541-73-1	NL	17,000	280,000	560,000	NL	17,000
1,4-Dichlorobenzene	106-46-7	2,600	9,800	130,000	250,000	NL	2,600
2-Butanone	78-93-3	27,000,000	100,000	500,000	1,000,000	100,000	100,000
2-Hexanone	591-78-6	200,000	NL	NL	NL	NL	200,000
4-Methyl-2-pentanone	108-10-1	33,000,000	NL	NL	NL	NL	33,000,000
Acetone	67-64-1	61,000,000	100,000	500,000	1,000,000	NL	100,000
Benzene	71-43-2	1,200	2,900	44,000	89,000	NL	1,200
Bromochloromethane	74-97-5	150,000	NL	NL	NL	NL	150,000
Bromodichloromethane	75-27-4	290	NL	NL	NL	NL	290
Bromoform	75-25-2	19,000	NL	NL	NL	NL	19,000
Bromomethane	74-83-9	6,800	NL	NL	NL	NL	6,800
Carbon Disulfide	75-15-0	770,000	NL	NL	NL	100,000	100,000
Carbon tetrachloride	56-23-5	650	1,400	22,000	44,000	NL	650
Chlorobenzene	108-90-7	280,000	100,000	500,000	1,000,000	NL	100,000
Chloroethane	75-00-3	14,000,000	NL	NL	NL	NL	14,000,000
Chloroform	67-66-3	320	10,000	350,000	700,000	NL	320
Chloromethane	74-87-3	110,000	NL	NL	NL	NL	110,000
cis-1,2-Dichloroethene	156-59-2	160,000	59,000	500,000	1,000,000	NL	59,000
cis-1,3-Dichloropropene	10061-01-5	NL	NL	NL	NL	NL	NL
Cyclohexane	110-82-7	6,500,000	NL	NL	NL	NL	6,500,000
Dibromochloromethane	124-48-1	8,300	NL	NL	NL	NL	8,300
Dichlorodifluoromethane	75-71-8	87,000	NL	NL	NL	NL	87,000
Ethylbenzene	100-41-4	5,800	30,000	390,000	780,000	NL	5,800
Isopropylbenzene	98-82-8	1,900,000	NL	NL	NL	100,000	100,000
m, p-Xylene *	1330-20-7	580,000	100,000	500,000	1,000,000	NL	100,000
Methyl acetate	79-20-9	78,000,000	NL	NL	NL	NL	78,000,000
Methyl tert-butyl ether	1634-04-4	47,000	62,000	500,000	1,000,000	NL	47,000
Methylcyclohexane	108-87-2	NL	NL	NL	NL	NL	NL
Methylene chloride	75-09-2	57,000	51,000	500,000	1,000,000	NL	51,000

Table 4-1a
RI Soil Screening Criteria - VOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Volatile Organic Compounds (All units: µg/kg)	CAS Number	Standards					RI Screening Criteria (4)
		Federal	New York				
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	NYSDEC CP-51 Soil Cleanup Guidance: Residential (3)	
o-Xylene *	95-47-6	650,000	100,000	500,000	1,000,000	NL	100,000
Styrene	100-42-5	6,000,000	NL	NL	NL	NL	6,000,000
Tetrachloroethene	127-18-4	24,000	5,500	150,000	300,000	NL	5,500
Toluene	108-88-3	4,900,000	100,000	500,000	1,000,000	NL	100,000
trans-1,2-Dichloroethene	156-60-5	1,600,000	100,000	500,000	1,000,000	NL	100,000
trans-1,3-Dichloropropene	10061-02-6	NL	NL	NL	NL	NL	NL
Trichloroethene	79-01-6	940	10,000	200,000	400,000	NL	940
Trichlorofluoromethane	75-69-4	23,000,000	NL	NL	NL	NL	23,000,000
Vinyl Chloride	75-01-4	59	210	13,000	27,000	NL	59

Notes:

1. EPA RSL Summary Table for Resident Soil, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
2. NYSDEC Subpart 375-6: Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, http://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf. December 14, 2006.
3. NYSDEC CP-51/Soil Cleanup Guidance: Table 1 - Supplemental Soil Cleanup Objectives: Residential, http://www.dec.ny.gov/docs/remediation_hudson_pdf/cpsoil.pdf. October 21, 2010.
4. The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

* Criteria are reported for Xylenes in the absence of a separate listed criteria.

Acronyms:

EPA = United States Environmental Protection Agency

CAS = Chemical abstract service

NYSDEC = New York State Department of Environmental Conservation

SCO = Soil Cleanup Objectives

RSL = Regional Screening Level

NL = Not listed or chemical name listed but no value available

VOC = volatile organic compound

µg/kg = micrograms per kilogram

Table 4-1b
RI Soil Screening Criteria - SVOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Semi-Volatile Organic Compounds (All units: µg/kg)	CAS Number	Standards					RI Screening Criteria (4)
		Federal	New York				
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	NYSDEC CP-51 Soil Cleanup Guidance: Residential (3)	
1,1'-Biphenyl	92-52-4	47,000	NL	NL	NL	NL	47,000
1,2,4,5-Tetrachlorobenzene	95-94-3	23,000	NL	NL	NL	NL	23,000
1,4-Dioxane	123-91-1	5,300	9,800	130,000	250,000	NL	5,300
2,2'-Oxybis (1-chloropropane)	108-60-1	3,100,000	NL	NL	NL	NL	3,100,000
2,3,4,6-Tetrachlorophenol	58-90-2	1,900,000	NL	NL	NL	NL	1,900,000
2,4,5-Trichlorophenol	95-95-4	6,300,000	NL	NL	NL	100,000	100,000
2,4,6-Trichlorophenol	88-06-2	49,000	NL	NL	NL	NL	49,000
2,4-Dichlorophenol	120-83-2	190,000	NL	NL	NL	100,000	100,000
2,4-Dimethylphenol	105-67-9	1,300,000	NL	NL	NL	NL	1,300,000
2,4-Dinitrophenol	51-28-5	130,000	NL	NL	NL	100,000	100,000
2,4-Dinitrotoluene	121-14-2	1,700	NL	NL	NL	NL	1,700
2,6-Dinitrotoluene	606-20-2	360	NL	NL	NL	1,030	360
2-Chloronapthalene	91-58-7	4,800,000	NL	NL	NL	NL	4,800,000
2-Chlorophenol	95-57-8	390,000	NL	NL	NL	100,000	100,000
2-Methylnapthalene	91-57-6	240,000	NL	NL	NL	410	410
2-Methylphenol	95-48-7	3,200,000	100,000	500,000	1,000,000	NL	100,000
2-Nitroaniline	88-74-4	630,000	NL	NL	NL	NL	630,000
2-Nitrophenol	88-75-5	NL	NL	NL	NL	NL	NL
3,3'-Dichlorobenzidine	91-94-1	1,200	NL	NL	NL	NL	1,200
3-Nitroaniline	99-09-2	NL	NL	NL	NL	NL	NL
4,6-Dinitro-2-methylphenol	534-52-1	5,100	NL	NL	NL	NL	5,100
4-Bromophenyl-phenylether	101-55-3	NL	NL	NL	NL	NL	NL
4-Chloro-3-methylphenol	59-50-7	6,300,000	NL	NL	NL	NL	6,300,000
4-Chloroaniline	106-47-8	2,700	NL	NL	NL	100,000	2,700
4-Chlorophenyl-phenyl ether	7005-72-3	NL	NL	NL	NL	NL	NL
4-Methylphenol	106-44-5	6,300,000	34,000	500,000	1,000,000	NL	34,000
4-Nitroaniline	100-01-6	27,000	NL	NL	NL	NL	27,000
4-Nitrophenol	100-02-7	NL	NL	NL	NL	NL	NL
Acenaphthene	83-32-9	3,600,000	100,000	500,000	1,000,000	NL	100,000
Acenaphthylene	208-96-8	NL	100,000	500,000	1,000,000	NL	100,000
Acetophenone	98-86-2	7,800,000	NL	NL	NL	NL	7,800,000
Anthracene	120-12-7	18,000,000	100,000	500,000	1,000,000	NL	100,000
Atrazine	1912-24-9	2,400	NL	NL	NL	NL	2,400
Benzaldehyde	100-52-7	7,800,000	NL	NL	NL	NL	7,800,000
Benzo (a) anthracene	56-55-3	160	1,000	5,600	11,000	NL	160
Benzo (a) pyrene	50-32-8	16	1,000	1,000	1,100	NL	16
Benzo (b) fluoroanthene	205-99-2	160	1,000	5,600	11,000	NL	160
Benzo (g,h,i) perylene	191-24-2	NL	100,000	500,000	NL	NL	100,000
Benzo (k) fluoroanthene	207-08-9	1,600	1,000	56,000	110,000	NL	1,000
Bis (2-chloroethoxy) methane	111-91-1	190,000	NL	NL	NL	NL	190,000
Bis (2-ethylhexyl) phthalate	117-81-7	39,000	NL	NL	NL	50,000	39,000
bis-(2-chloroethyl) ether	111-44-4	230	NL	NL	NL	NL	230

Table 4-1b
RI Soil Screening Criteria - SVOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Semi-Volatile Organic Compounds (All units: µg/kg)	CAS Number	Standards					RI Screening Criteria (4)
		Federal	New York				
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	NYSDEC CP-51 Soil Cleanup Guidance: Residential (3)	
Butylbenzylphthalate	85-68-7	290,000	NL	NL	NL	100,000	100,000
Caprolactam	105-60-2	31,000,000	NL	NL	NL	NL	31,000,000
Carbazole	86-74-8	NL	NL	NL	NL	NL	NL
Chrysene	218-01-9	16,000	1,000	56,000	110,000	NL	1,000
Dibenzo (a,h)-anthracene	53-70-3	16	330	560	1,100	NL	16
Dibenzofuran	132-64-9	73,000	14,000	350,000	1,000,000	NL	14,000
Diethylphthalate	84-66-2	51,000,000	NL	NL	NL	100,000	100,000
Dimethylphthalate	131-11-3	NL	NL	NL	NL	100,000	100,000
Di-n-butylphthalate	84-74-2	6,300,000	NL	NL	NL	100,000	100,000
Di-n-octylphthalate	117-84-0	630,000	NL	NL	NL	100,000	100,000
Fluoranthene	206-44-0	2,400,000	100,000	500,000	1,000,000	NL	100,000
Fluorene	86-73-7	2,400,000	100,000	500,000	1,000,000	NL	100,000
Hexachlorobenzene	118-74-1	210	330	6,000	12,000	410	210
Hexachlorobutadiene	87-68-3	1,200	NL	NL	NL	NL	1,200
Hexachlorocyclo-pentadiene	77-47-4	1,800	NL	NL	NL	NL	1,800
Hexachloroethane	67-72-1	1,800	NL	NL	NL	NL	1,800
Indeno (1,2,3-cd)-pyrene	193-39-5	160	500	5,600	11,000	NL	160
Isophorone	78-59-1	570,000	NL	NL	NL	100,000	100,000
Napthalene	91-20-3	3,800	100,000	500,000	1,000,000	NL	3,800
Nitrobenzene	98-95-3	5,100	NL	69,000	140,000	3,700	3,700
N-Nitroso-di-n propylamine	621-64-7	78	NL	NL	NL	NL	78
N-Nitrosodiphenylamine	86-30-6	110,000	NL	NL	NL	NL	110,000
Pentachlorophenol	87-86-5	1,000	2,400	6,700	55,000	NL	1,000
Phenanthrene	85-01-8	NL	100,000	500,000	1,000,000	NL	100,000
Phenol	108-95-2	19,000,000	100,000	500,000	1,000,000	NL	100,000
Pyrene	129-00-0	1,800,000	100,000	500,000	1,000,000	NL	100,000

Notes:

1. EPA RSL Summary Table for Resident Soil, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
2. NYSDEC Subpart 375-6: Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, http://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf. December 14, 2006.
3. NYSDEC CP-51/Soil Cleanup Guidance: Table 1 - Supplemental Soil Cleanup Objectives: Residential, http://www.dec.ny.gov/docs/remediation_hudson_pdf/cpsoil.pdf. October 21, 2010.
4. The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

Acronyms:

EPA = United States Environmental Protection Agency

CAS = Chemical abstract service

NYSDEC = New York State Department of Environmental Conservation

SCO = Soil Cleanup Objectives

RSL = Regional Screening Level

NL = Not listed or chemical name listed but no value available

SVOC = semi-volatile organic compound

µg/kg = micrograms per kilogram

Table 4-1c
RI Soil Screening Criteria - PCBs (Aroclors)
Wolff-Alport Chemical Company Site
Ridgewood, NY

Aroclors (All units: µg/kg)	CAS Number	Standards				RI Screening Criteria (3)
		Federal	New York			
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	
Aroclor-1016	12674-11-2	4,100	1,000	1,000	25,000	1,000
Aroclor-1221	11104-28-2	200	1,000	1,000	25,000	200
Aroclor-1232	11141-16-5	170	1,000	1,000	25,000	170
Aroclor-1242	53469-21-9	230	1,000	1,000	25,000	230
Aroclor-1248	12672-29-6	230	1,000	1,000	25,000	230
Aroclor-1254	11097-69-1	240	1,000	1,000	25,000	240
Aroclor-1260	11096-82-5	240	1,000	1,000	25,000	240
Aroclor-1262	37324-23-5	NL	1,000	1,000	25,000	1,000
Aroclor-1268	11100-14-4	NL	1,000	1,000	25,000	1,000

Notes:

1. EPA RSL Summary Table for Resident Soil, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
2. NYSDEC Subpart 375-6: Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, http://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf. December 14, 2006.
3. The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

Acronyms:

EPA = United States Environmental Protection Agency

CAS = Chemical abstract service

NYSDEC = New York State Department of Environmental Conservation

SCO = Soil Cleanup Objectives

RSL = Regional Screening Level

NL = Not listed or chemical name listed but no value available

PCB = polychlorinated biphenyl

µg/kg = micrograms per kilogram

Table 4-1d
RI Soil Screening Criteria - Pesticides
Wolff-Alport Chemical Company Site
Ridgewood, NY

Pesticides (All units: µg/kg)	CAS Number	Standards					RI Soil Screening Criteria (4)
		Federal	New York				
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	NYSDEC CP-51 Soil Cleanup Guidance: Residential (3)	
4,4'-DDD	72-54-8	2,300	2,600	92,000	180,000	NL	2,300
4,4'-DDE	72-55-9	2,000	1,800	62,000	120,000	NL	1,800
4,4'-DDT	50-29-3	1,900	1,700	47,000	94,000	NL	1,700
Aldrin	309-00-2	39	19	680	1,400	NL	19
alpha-BHC	319-84-6	86	97	3,400	6,800	NL	86
alpha-Chlordane*	5103-71-9	1,700	910	24,000	47,000	NL	910
beta-BHC	319-85-7	300	72	3,000	14,000	NL	72
delta-BHC	319-86-8	86	100,000	500,000	1,000,000	NL	86
Dieldrin	60-57-1	34	39	1,400	2,800	NL	34
Endosulfan*	115-29-7	470,000	NL	200,000	920,000	NL	200,000
Endosulfan I	959-98-8	470,000	4,800	200,000	920,000	NL	4,800
Endosulfan II	33213-65-9	470,000	4,800	200,000	920,000	NL	4,800
Endosulfan sulfate	1031-07-8	470,000	4,800	200,000	920,000	NL	4,800
Endrin *	72-20-8	19,000	2,200	89,000	410,000	NL	2,200
Endrin aldehyde *	7421-93-4	19,000	2,200	89,000	410,000	NL	2,200
Endrin ketone *	53494-70-5	19,000	2,200	89,000	410,000	NL	2,200
gamma-BHC (Lindane)	58-89-9	570	280	9,200	23,000	NL	280
gamma-Chlordane*	5103-74-2	1,700	NL	NL	NL	540	540
Heptachlor	76-44-8	130	420	15,000	29,000	NL	130
Heptachlor epoxide	1024-57-3	70	NL	NL	NL	77	70
Methoxychlor	72-43-5	320,000	NL	NL	NL	100,000	100,000
Toxaphene	8001-35-2	490	NL	NL	NL	NL	490

Notes:

- EPA RSL Summary Table for Resident Soil, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
 *Screening value for chlordane is applied to alpha-chlordane and gamma-chlordane.
 *Screening value for alpha-BHC is applied to delta-BHC.
 *Screening value for endosulfan is applied to endosulfan I, endosulfan II, and endosulfan sulfate.
 *Screening value for endrin is applied to endrin aldehyde and endrin ketone.
- NYSDEC Subpart 375-6: Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, http://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf.
 *Screening value for chlordane is applied to alpha-chlordane and gamma-chlordane.
 *Screening value for endosulfan is applied to endosulfan I, endosulfan II, and endosulfan sulfate.
 *Screening value for endrin is applied to endrin aldehyde and endrin ketone.
- NYSDEC CP-51/Soil Cleanup Guidance: Table 1 - Supplemental Soil Cleanup Objectives: Residential, http://www.dec.ny.gov/docs/remediation_hudson_pdf/cpsol.pdf. October 21, 2010.
- The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

Acronyms:

EPA = United States Environmental Protection Agency

CAS = Chemical abstract service

NYSDEC = New York State Department of Environmental Conservation

SCO = Soil Cleanup Objectives

RSL = Regional Screening Level

NL = Not listed or chemical name listed but no value available

µg/kg = micrograms per kilogram

Table 4-1e
RI Soil Screening Criteria - Inorganics
Wolff-Alport Chemical Company Site
Ridgewood, NY

Inorganics (All units: mg/kg)	CAS Number	Standards					RI Screening Criteria (4)
		Federal		New York			
		EPA RSLs for Residential Soils (1)	NYSDEC Residential Use SCOs (2)	NYSDEC Commercial Use SCOs (2)	NYSDEC Industrial Use SCOs (2)	NYSDEC CP-51 Soil Cleanup Guidance: Residential (3)	
Aluminum	7429-90-5	77,000	NL	NL	NL	NL	77,000
Antimony	7440-36-0	31	NL	NL	NL	NL	31
Arsenic	7440-38-2	0.68	16	16	16	NL	0.68
Barium	7440-39-3	15,000	350	400	10,000	NL	350
Beryllium	7440-41-7	160	14	590	2,700	NL	14
Cadmium	7440-43-9	71	2.5	9.3	60	NL	2.5
Calcium	7440-70-2	NL	NL	NL	NL	NL	NL
Chromium*	7440-47-3	NL	NL	NL	NL	NL	NL
Cobalt	7440-48-4	23	NL	NL	NL	30	23
Copper	7440-50-8	3,100	270	270	10,000	NL	270
Cyanide	57-12-5	2.7	27	27	10,000	NL	2.7
Iron	7439-89-6	55,000	NL	NL	NL	2000	2,000
Lead	7439-92-1	400	400	1,000	3,900	NL	400
Magnesium	7439-95-4	NL	NL	NL	NL	NL	NL
Manganese	7439-96-5	NL	2000	10,000	10,000	NL	2,000
Mercury	7439-97-6	11	0.81	2.8	5.7	NL	0.81
Nickel	7440-02-0	1,500	140	310	10000	NL	140
Potassium	7440-09-7	NL	NL	NL	NL	NL	NL
Selenium	7782-49-2	390	36	1,500	6,800	NL	36
Silver	7440-22-4	390	36	1,500	6,800	NL	36
Sodium	7440-23-5	NL	NL	NL	NL	NL	NL
Thallium	7440-28-0	0.78	NL	NL	NL	NL	0.78
Vanadium	7440-62-2	390	NL	NL	NL	100	100
Zinc	7440-66-6	23,000	2200	10,000	10,000	NL	2,200

Notes:

1. EPA RSL Summary Table for Resident Soil, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
2. NYSDEC Subpart 375-6: Table 375-6.8(b): Restricted Use Soil Cleanup Objectives, http://www.dec.ny.gov/docs/remediation_hudson_pdf/part375.pdf.
3. NYSDEC CP-51/Soil Cleanup Guidance: Table 1 - Supplemental Soil Cleanup Objectives: Residential, http://www.dec.ny.gov/docs/remediation_hudson_pdf/cpsoil.pdf. October 21, 2010.
4. The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

*Chromium based on EPA MCL for total chromium.

Acronyms:

EPA = United States Environmental Protection Agency

CAS = Chemical abstract service

NYSDEC = New York State Department of Environmental Conservation

SCO = Soil Cleanup Objectives

RSL = Regional Screening Level

NL = Not listed or chemical name listed but no value available

mg/kg = milligrams per kilogram

Table 4-2a
RI Groundwater Screening Criteria - VOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Volatile Organic Compounds (All units: µg/L)	CAS Number	Standards			RI Screening Criteria (4)
		Federal		New York	
		EPA National Primary Drinking Water Standards (1)	EPA RSLs for Tap Water (2)	NYSDEC Standards and Guidance Values for Class GA Groundwater (3)	
1,1,1-Trichloroethane	71-55-6	200	8,000	5	5
1,1,2,2-Tetrachloroethane	79-34-5	NL	0.076	5	0.076
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NL	55,000	5	5
1,1,2-Trichloroethane	79-00-5	5	0.280	1	0.28
1,1-Dichloroethane	75-34-3	NL	2.8	5	2.8
1,1-Dichloroethene	75-35-4	7	280	5	5
1,2,3-Trichlorobenzene	87-61-6	NL	7	5	5
1,2,4-Trichlorobenzene	120-82-1	70	1.2	5	1.2
1,2-Dibromo-3-chloropropane	96-12-8	0	0.00033	0.04	0.00033
1,2-Dibromoethane	106-93-4	0	0.00750	0.0006	0.0006
1,2-Dichlorobenzene	95-50-1	600	300	3	3
1,2-Dichloroethane	107-06-2	5	0.17	0.6	0.17
1,2-Dichloropropane	78-87-5	5	0.44	1	0.44
1,3-Dichlorobenzene	541-73-1	NL	NL	3	3
1,4-Dichlorobenzene	106-46-7	75	0.48	3	0.48
2-Butanone	78-93-3	NL	5,600	50	50
2-Hexanone	591-78-6	NL	38	50	38
4-Methyl-2-pentanone	108-10-1	NL	6,300	NL	6,300
Acetone	67-64-1	NL	14,000	50	50
Benzene	71-43-2	5	0.46	1	0.46
Bromochloromethane	74-97-5	NL	83	5	5
Bromodichloromethane	75-27-4	80	0.13	50	0.13
Bromoform	75-25-2	80	3.3	50	3.3
Bromomethane	74-83-9	NL	8	5	5
Carbon Disulfide	75-15-0	NL	810	60	60
Carbon tetrachloride	56-23-5	5	0.46	5	0.46
Chlorobenzene	108-90-7	100	78	5	5
Chloroethane	75-00-3	NL	21,000	5	5
Chloroform	67-66-3	80	0.22	7	0.22
Chloromethane	74-87-3	NL	190	5	5
cis-1,2-Dichloroethene	156-59-2	70	36	5	5
cis-1,3-Dichloropropene	10061-01-5	NL	NL	0.4	0.4
Cyclohexane	110-82-7	NL	13,000	NL	13,000
Dibromochloromethane	124-48-1	80	0.87	50	0.87
Dichlorodifluoromethane	75-71-8	NL	200	5	5
Ethylbenzene	100-41-4	700	2	5	1.5
Isopropylbenzene	98-82-8	NL	450	5	5
m, p-Xylene *	1330-20-7	10,000	190	5	5
Methyl acetate	79-20-9	NL	20,000	NL	20,000
Methyl tert-butyl ether	1634-04-4	NL	14	10	10
Methylcyclohexane	108-87-2	NL	NL	NL	NL
Methylene chloride	75-09-2	5	11	5	5
o-Xylene *	1330-20-7	10,000	190	5	5
Styrene	100-42-5	100	1,200	5	5
Tetrachloroethene	127-18-4	5	11	5	5
Toluene	108-88-3	1,000	1,100	5	5
trans-1,2-Dichloroethene	156-60-5	100	360	5	5
trans-1,3-Dichloropropene	10061-02-6	NL	NL	0.4	0.4
Trichloroethene	79-01-6	5	0.49	5	0.49
Trichlorofluoromethane	75-69-4	NL	5,200	5	5
Vinyl Chloride	75-01-4	2	0.019	2	0.019

Notes:

- EPA National Primary Drinking Water Standards (web page <http://water.epa.gov/drink/contaminants/index.cfm#List>), EPA 816-F-09-0004, May 2009.
 - EPA RSL Summary Table for Tap Water, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
 - NYSDEC. June 1998. TOGS 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
 Class Type: Protection for Source of Drinking Water - H(WS)
 Includes April 2000 and June 2004 Addendum values. (<http://www.dec.ny.gov/regulations/2652.html>)
 Includes revisions in Part 703 effective February 16, 2008.
 - The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.
- * Xylene (total) was used for o-xylene and m,p-xylene criteria.

Acronyms:

EPA = United States Environmental Protection Agency

CAS = Chemical abstract service

NYSDEC = New York State Department of Environmental Conservation

RSL - regional screening level

VOC = volatile organic compound

µg/L = micrograms per liter

NL = Not listed or chemical name listed but no value available

Table 4-2b
RI Groundwater Screening Criteria - SVOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Semi-Volatile Organic Compounds (All units: µg/L)	CAS Number	Standards			RI Screening Criteria (4)
		Federal		New York	
		EPA National Primary Drinking Water Standards (1)	EPA RSLs for Tap Water (2)	NYSDEC Standards and Guidance Values for Class GA Groundwater (3)	
1,1'-Biphenyl	92-52-4	NL	0.83	5	0.83
1,2,4,5-Tetrachlorobenzene	95-94-3	NL	1.7	5	1.7
1,4-Dioxane*	123-91-1	NL	0.46	NL	0.46
2,2'-Oxybis (1-chloropropane)	108-60-1	NL	710	5	5
2,3,4,6-Tetrachlorophenol	58-90-2	NL	240	NL	240
2,4,5-Trichlorophenol	95-95-4	NL	1,200	NL	1,200
2,4,6-Trichlorophenol	88-06-2	NL	4.1	NL	4.1
2,4-Dichlorophenol	120-83-2	NL	46	5	5
2,4-Dimethylphenol	105-67-9	NL	360	50	50
2,4-Dinitrophenol	51-28-5	NL	39	10	10
2,4-Dinitrotoluene	121-14-2	NL	0.24	5	0.24
2,6-Dinitrotoluene	606-20-2	NL	0.049	5	0.049
2-Chloronaphthalene	91-58-7	NL	750	NL	750
2-Chlorophenol	95-57-8	NL	91	NL	91
2-Methylnaphthalene	91-57-6	NL	36	NL	36
2-Methylphenol	95-48-7	NL	930	NL	930
2-Nitroaniline	88-74-4	NL	190	5	5
2-Nitrophenol	88-75-5	NL	NL	NL	NL
3,3'-Dichlorobenzidine	91-94-1	NL	0.13	5	0.13
3-Nitroaniline	99-09-2	NL	NL	5	5
4,6-Dinitro-2-methylphenol	534-52-1	NL	1.5	NL	1.5
4-Bromophenyl-phenylether	101-55-3	NL	NL	NL	NL
4-Chloro-3-methylphenol	59-50-7	NL	1,400	NL	1,400
4-Chloroaniline	106-47-8	NL	0.37	5	0.37
4-Chlorophenyl-phenyl ether	7005-72-3	NL	NL	NL	NL
4-Methylphenol	106-44-5	NL	1,900	NL	1,900
4-Nitroaniline	100-01-6	NL	3.8	5	3.8
4-Nitrophenol	100-02-7	NL	NL	NL	NL
Acenaphthene	83-32-9	NL	530	NL	530
Acenaphthylene	208-96-8	NL	NL	NL	NL
Acetophenone	98-86-2	NL	1,900	NL	1,900
Anthracene	120-12-7	NL	1,800	50	50
Atrazine	1912-24-9	3	0.3	7.5	0.3
Benzaldehyde	100-52-7	NL	1,900	NL	1,900
Benzo (a) anthracene	56-55-3	NL	0.012	0.002	0.002
Benzo (a) pyrene	50-32-8	0.2	0.0034	NL	0.0034
Benzo (b) fluoroanthene	205-99-2	NL	0.034	0.002	0.002
Benzo (g,h,i) perylene	191-24-2	NL	NL	NL	NL
Benzo (k) fluoroanthene	207-08-9	NL	0.34	0.002	0.002
Bis (2-chloroethoxy) methane	111-91-1	NL	59	5	5
Bis (2-ethylhexyl) phthalate	117-81-7	6	5.6	5	5
Bis (2-chloroethyl) ether	111-44-4	NL	0.014	1	0.014
Butylbenzylphthalate	85-68-7	NL	16	50	16
Caprolactam	105-60-2	NL	9,900	NL	9,900
Carbazole	86-74-8	NL	NL	NL	NL
Chrysene	218-01-9	NL	3.4	0.002	0.002
Dibenzo (a,h) anthracene	53-70-3	NL	0.0034	NL	0.0034
Dibenzofuran	132-64-9	NL	7.9	NL	7.9
Diethylphthalate	84-66-2	NL	15,000	50	50
Dimethylphthalate	131-11-3	NL	NL	50	50
Di-n-butylphthalate	84-74-2	NL	900	50	50
Di-n-octylphthalate	117-84-0	NL	200	50	50
Fluoranthene	206-44-0	NL	800	50	50
Fluorene	86-73-7	NL	290	50	50
Hexachlorobenzene	118-74-1	1	0.0098	0.04	0.0098
Hexachlorobutadiene	87-68-3	NL	0.14	0.5	0.14
Hexachlorocyclo-pentadiene	77-47-4	50	0.41	5	0.41
Hexachloroethane	67-72-1	NL	0.33	5	0.33

Table 4-2b
RI Groundwater Screening Criteria - SVOCs
Wolff-Alport Chemical Company Site
Ridgewood, NY

Semi-Volatile Organic Compounds (All units: µg/L)	CAS Number	Standards			RI Screening Criteria (4)
		Federal		New York	
		EPA National Primary Drinking Water Standards (1)	EPA RSLs for Tap Water (2)	NYSDEC Standards and Guidance Values for Class GA Groundwater (3)	
Indeno (1,2,3-cd) pyrene	193-39-5	NL	0.034	0.002	0.002
Isophorone	78-59-1	NL	78	50	50
Naphthalene	91-20-3	NL	0.17	NL	0.17
Nitrobenzene	98-95-3	NL	0.14	0.4	0.14
N-Nitrosodi-n propylamine	621-64-7	NL	0.011	NL	0.011
N-Nitrosodiphenylamine	86-30-6	NL	12	50	12
Pentachlorophenol	87-86-5	1	0.041	2	0.041
Phenanthrene	85-01-8	NL	NL	50	50
Phenol	108-95-2	NL	5,800	2	2
Pyrene	129-00-0	NL	120	50	50

Notes:

- EPA National Primary Drinking Water Standards (web page <http://water.epa.gov/drink/contaminants/index.cfm#List>), EPA 816-F-09-0004, May 2009.
 - EPA RSL Summary Table for Tap Water, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
 - NYSDEC. June 1998. TOGS 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
 Class Type: Protection for Source of Drinking Water - H(WS)
 Includes April 2000 and June 2004 Addendum values. (<http://www.dec.ny.gov/regulations/2652.html>)
 Includes revisions in Part 703 effective February 16, 2008.
 - The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.
- * 1,4-Dioxane will be requested for SVOC analysis.

Acronyms:

EPA = United States Environmental Protection Agency

SVOC = volatile organic compound

CAS = Chemical abstract service

µg/L = micrograms per liter

NYSDEC = New York State Department of Environmental Conservation

NL = Not listed or chemical name listed but no value available

RSL - regional screening level

Table 4-2c
RI Groundwater Screening Criteria - PCBs (Aroclors)
Wolff-Alport Chemical Company Site
Ridgewood, NY

Aroclors (All units: µg/L)	CAS Number	Standards			RI Screening Criteria (4)
		Federal		New York	
		EPA National Primary Drinking Water Standards (1)	EPA RSLs for Tap Water (2)	NYSDEC Standards and Guidance Values for Class GA Groundwater (3)*	
Aroclor-1016	12674-11-2	0.5	0.22	0.09	0.09
Aroclor-1221	11104-28-2	0.5	0.0047	0.09	0.0047
Aroclor-1232	11141-16-5	0.5	0.0047	0.09	0.0047
Aroclor-1242	53469-21-9	0.5	0.0078	0.09	0.0078
Aroclor-1248	12672-29-6	0.5	0.0078	0.09	0.0078
Aroclor-1254	11097-69-1	0.5	0.0078	0.09	0.0078
Aroclor-1260	11096-82-5	0.5	0.0078	0.09	0.0078
Aroclor-1262	37324-23-5	0.5	NL	0.09	0.09
Aroclor-1268	11100-14-4	0.5	NL	0.09	0.09

Notes:

- EPA National Primary Drinking Water Standards (web page <http://water.epa.gov/drink/contaminants/index.cfm#List>), EPA 816-F-09-0004, May 2009.
- EPA RSL Summary Table for Tap Water, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
- NYSDEC. June 1998. TOGS 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
Class Type: Protection for Source of Drinking Water - H(WS)
Includes April 2000 and June 2004 Addendum values. (<http://www.dec.ny.gov/regulations/2652.html>)
Includes revisions in Part 703 effective February 16, 2008.
* Applies to the sum of all polychlorinated biphenyls.
- The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

Acronyms:

EPA = United States Environmental Protection Agency

PCB = polychlorinated biphenyl

CAS = Chemical abstract service

µg/L = micrograms per liter

NYSDEC = New York State Department of Environmental Conservation

NL = Not listed or chemical name listed but no value available

RSL - regional screening level

Table 4-2d
RI Groundwater Screening Criteria - Pesticides
Wolff-Alport Chemical Company Site
Ridgewood, NY

Aroclors (All units: µg/L)	CAS Number	Standards			RI Screening Criteria (4)
		Federal		New York	
		EPA National Primary Drinking Water Standards (1)	EPA RSLs for Tap Water (2)	NYSDEC Standards and Guidance Values for Class GA Groundwater (3)	
4,4'-DDD	72-54-8	NL	0.032	0.3	0.032
4,4'-DDE	72-55-9	NL	0.046	0.2	0.046
4,4'-DDT	50-29-3	NL	0.23	0.2	0.2
Aldrin	309-00-2	NL	0.00092	NL	0.00092
alpha-BHC	319-84-6	NL	0.0072	0.01	0.0072
alpha-Chlordane	5103-71-9	2	NL	0.05	0.05
beta-BHC	319-85-7	NL	0.025	0.04	0.025
delta-BHC	319-86-8	NL	NL	0.04	0.04
Dieldrin	60-57-1	NL	0.0018	0.004	0.0018
Endosulfan I	959-98-8	NL	NL	NL	NL
Endosulfan II	33213-65-9	NL	NL	NL	NL
Endosulfan sulfate	1031-07-8	NL	NL	NL	NL
Endrin	72-20-8	2	2.3	NL	2
Endrin aldehyde	7421-93-4	NL	NL	5	5
Endrin ketone	53494-70-5	NL	NL	5	5
gamma-BHC (Lindane)	58-89-9	0.2	0.042	0.05	0.042
gamma-Chlordane*	5103-74-2	2	NL	0.05	0.05
Heptachlor	76-44-8	0.4	0.0014	0.04	0.0014
Heptachlor epoxide	1024-57-3	0.2	0.0014	0.03	0.0014
Methoxychlor	72-43-5	40	37	35	35
Toxaphene	8001-35-2	3	0.071	0.06	0.06

Notes:

1. EPA National Primary Drinking Water Standards (web page <http://water.epa.gov/drink/contaminants/index.cfm#List>), EPA 816-F-09-0004, May 2009.
2. EPA RSL Summary Table for Tap Water, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
3. NYSDEC. June 1998. TOGS 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
Class Type: Protection for Source of Drinking Water - H(WS)
Includes April 2000 and June 2004 Addendum values. (<http://www.dec.ny.gov/regulations/2652.html>)
Includes revisions in Part 703 effective February 16, 2008.
4. The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

Acronyms:

EPA = United States Environmental Protection Agency

µg/L = micrograms per liter

CAS = Chemical abstract service

NL = Not listed or chemical name listed but no value available

NYSDEC = New York State Department of Environmental Conservation

RSL - regional screening level

Table 4-2e
RI Groundwater Screening Criteria - Inorganics
Wolff-Alport Chemical Company Site
Ridgewood, NY

Inorganics (All units: µg/L)	CAS Number	Standards			RI Screening Criteria (4)
		Federal		New York	
		EPA National Primary Drinking Water Standards (1)	EPA RSLs for Tap Water (2)	NYSDEC Standards and Guidance Values for Class GA Groundwater (3)	
Aluminum	7429-90-5	NL	20,000	NL	20,000
Antimony	7440-36-0	6	7.8	3	3
Arsenic	7440-38-2	10	0.052	25	0.052
Barium	7440-39-3	2,000	3,800	1,000	1,000
Beryllium	7440-41-7	4	25	3	3
Cadmium	7440-43-9	5	NL	5	5
Calcium	7440-70-2	NL	NL	NL	NL
Chromium	7440-47-3	100	NL	50	50
Cobalt	7440-48-4	NL	6	NL	6
Copper	7440-50-8	1,300	800	200	200
Cyanide	57-12-5	200	1.5	200	1.5
Iron	7439-89-6	NL	14,000	300	300
Lead	7439-92-1	15	15	25	15
Magnesium	7439-95-4	NL	NL	35,000	35,000
Manganese	7439-96-5	NL	NL	300	300
Mercury	7439-97-6	2	0.63	0.7	0.63
Nickel	7440-02-0	NL	390	100	100
Potassium	7440-09-7	NL	NL	NL	NL
Selenium	7782-49-2	50	100	10	10
Silver	7440-22-4	NL	94	50	50
Sodium	7440-23-5	NL	NL	20,000	20,000
Thallium	7440-28-0	2	0.2	0.5	0.2
Vanadium	7440-62-2	NL	86	NL	86
Zinc	7440-66-6	NL	6,000	2,000	2,000

Notes:

1. EPA National Primary Drinking Water Standards (web page <http://water.epa.gov/drink/contaminants/index.cfm#List>), EPA 816-F-09-0004, May 2009.
2. EPA RSL Summary Table for Tap Water, (<http://www.epa.gov/region9/superfund/prg/>) November 2015.
3. NYSDEC. June 1998. TOGS 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
Class Type: Protection for Source of Drinking Water - H(W)
Includes April 2000 and June 2004 Addendum values. (<http://www.dec.ny.gov/regulations/2652.html>)
Includes revisions in Part 703 effective February 16, 2008.
4. The RI Soil Screening Criteria is selected from the lowest of the EPA and NYSDEC soils standards.

Acronyms:

EPA = United States Environmental Protection Agency µg/L = micrograms per liter
CAS = Chemical abstract service NL = Not listed or chemical name listed but no value available
NYSDEC = New York State Department of Environmental Conservation
RSL - regional screening level

Table 4-3
RI Screening Criteria - Radiological Analyses
Wolff-Alport Chemical Company Site
Ridgewood, NY

Radionuclide	RI Screening Criteria	Units	Notes
Solids¹			
Th-232	0.851	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for soils
Ra-226	0.965	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for soils
Sediments			
Ra-226	0.756	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for sediments
Th-230	0.685	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for sediments
Th-232	0.904	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for sediments
U-234	1.262	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for sediments
U-235	0.224	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for sediments
U-238	1.116	pCi/g	The RI screening criteria will use the 95% UTL from the background data set for sediments
Aqueous³			
Ra-226/Th-232	5	pCi/L	Combined Ra-226 and Th-228 can not exceed 5 pCi/L. In this case the Th-232 is used as a surrogate measure of the Ra-228 likely to be present.
Air			
Radon/Thoron	1.40	pCi/L	Development of screening criteria is based on the 95% UCL calculated from NYSDOH on-going radon data collection study ⁴ . The Weston report did not provide the background radon results and thus no calculation could be made from that report. CDM does not at this time possess the complete NYSDOH data set so a UTL could not be calculated.

Notes:

1. Solids will include soils and other materials sampled excluding sediments, groundwater and air samples.
2. Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites. Directive no. 9200.4-25. February 12, 1998
3. 40 CFR.141.15, Maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity in community water systems.
4. <https://health.data.ny.gov/Health/Radon-Test-Results-By-Town-Beginning-1987/hbu9-xsrx>

Acronyms:

pCi/g - picoCuries per gram	Rn - radon
pCi/L - picoCuries per liter	Th - thorium
Ra - radium	U - uranium